REMARKS

Claims 1-28 were examined in the outstanding final office action mailed on 09/13/2007 (hereafter "Outstanding Office Action"). All claims were rejected.

5   By virtue of this paper, claims 1-4, 8, 15-19, and 23-26 are sought to be amended. The amendments are believed not to introduce new matter and their entry is respectfully requested. The amendments are made without prejudice or disclaimer. Reconsideration is respectfully requested further in view of the below remarks.

Rejections - 35 USC § 101

10   In pages 2 and 3 paragraphs 1 and 2 of the Outstanding Office Action, claims 16-22 were rejected under 35 U.S.C. § 101 allegedly as being directed to non-statutory subject matter. As suggested by the Examiner, independent claim 16 is sought to be amended to replace the term "carrying" with "storing". The claim clearly further recites that the stored instructions are executed to cause the performance of various elements noted there.

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Withdrawal of the rejection under 35 USC § 101 with respect to claims 16-22 is respectfully requested.

Claim Rejections - 35 U.S.C. §102

20   In pages 3 and 4 paragraph 1 and 2 of the Outstanding Office Action, claims 1, 15, 16, and 23 were rejected under 35 U.S.C. 102(a) as being anticipated by USP Number 6549643 B1 issued to Toklu *et al* (hereafter "Toklu").

25   Without acquiescing to the Examiner's contentions, it is asserted that the presented claims overcome the rejection.

For example, currently amended claim 1 recites that a rate of change of visual content is determined, with the rate of change representing, "… *a difference of a first value and a* 30 *second value*, said first value representing a change of visual content of a current frame compared to a first frame, said second value representing a change of visual content of said first frame compared to a second frame, wherein said second frame is a reference frame for

said first frame and said first frame is a reference frame for said current frame" (***Emphasis Added***).

At least the portions of Toklu relied upon in the Outstanding Office Action, do not disclose or reasonably suggest such a feature.

In support of this assertion, the details of step 212 relied upon in the Outstanding Office Action (see page 3, last 5 lines of the Outstanding Office Action) are reproduced for the convenience of the Examiner:

> Referring now to FIG. 2B, if operating level B is selected (step 211), a motion activity detection and analysis will be performed for selecting key-frames. A preferred method for selecting key-frames within a given video shot based on motion detection proceeds as follows. The first step is to estimate **camera motion between consecutive frames in the video for each segment (step 212).** It is to be appreciated that camera (dominant) **motion information is useful in the analysis of shots because camera motions often explicitly reflect the communication intentions of the director.** In addition, dominant motion detection is useful for constructing still images (as described in "Salient Video Stills: Content and Context Preserved," by Teodosio et al., in Proceedings of the ACM Multimedia, pp. 29-46, Anaheim, Canada, 1993), and, thus, effectively representing video content.

(Col. 7, line 66- Col. 8 line 14 of Toklu, *Emphasis Added*)

From the above, it is respectfully pointed out that the portion relied upon in the Outstanding Office Action attempts <u>to determine the camera motion between consecutive frames in the video</u> for each segment.

There is no disclosure or suggestion at least in the above quoted portions that the rate of change, as recited in claim 1, is computed.

Accordingly, it is submitted that the Outstanding Office Action does not establish a proper basis for anticipation under 35 U.S.C. § 102.

It is therefore contended that currently amended claim 1 is allowable over the art of record. Claims 2-15 depend from claim 1 and are allowable at least for the reasons noted above with respect to claim 1.

Currently amended independent claims 16 and 23 are also allowable over the art of record at least for the reasons noted above with respect to claim 1. Claims 17-22 and 24-28 respectively depend from claims 16 and 23, and are also allowable at least for reasons noted above with respect to claim 1.

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At least some of the dependent claims are independently allowable at least for the reasons noted below.

Claim Rejections - 35 U.S.C. §103

10   Claims 2-4, 6, 9-11, 13, 17-19, 21, 24-26 and 28 were rejected under 35 U.S.C. 103(a) as being unpatentable over Toklu in view of USP US 7027513 B2 issued to Zhang *et al* (hereafter "Zhang").

Again, without acquiescing to the Examiner's contentions, it is asserted that the
15   presented claims overcome the rejection.

For example, currently amended claim 2 is allowable over the art of record at least in reciting that the rate is computed from a first representative magnitude and a second representative magnitude as "...computing a first representative magnitude of said
20   displacement magnitude for said moved pixels of said current frame compared to said first frame, and a second representative magnitude of said displacement magnitude for said moved pixels of said first frame compared to said second frame... such that *said rate is computed as a difference of said first representative magnitude and said second representative magnitude*". (*Emphasis Added*).

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In the Outstanding Office Action (Page 4, Last 2 lines and page 5, first 2 lines), the Examiner admits that Toklu does not specifically disclose determining a displacement magnitude of each moved pixel of said current frame compared to the position in said reference frame and computing a representative magnitude of said displacement magnitude
30   for said moved pixels of said current frame.

Instead the Examiner relies on Zhang for the feature of computing a displacement magnitude. Even assuming that Zhang teaches the claimed displacement magnitude, it is

asserted that Zhang does not teach or reasonably suggest the claimed computation of the rate as a difference of two magnitudes.

5   Thus, currently amended claim 2 is independently allowable over the art of record.

Original claim 6 is independently allowable in reciting that, "… identifying a plurality of **active pixels** in said current frame, wherein a pixel is considered an active pixel if a corresponding displacement magnitude is outside of a range, ***wherein only said plurality of active pixels are used by said computing***" (***Emphasis Added***).

10   Therefore, the claim recites that <u>only the active pixels</u> are considered in computing the displacement magnitude.

At least the portions of Toklu relied upon in the Outstanding Office Action (see page 15 5, line 21- page 6 line 2 of the Outstanding Office Action), do not disclose or reasonably suggest such a feature.

In support of this assertion, some of the relevant portions of Toklu, including the details of some of the portions relied upon in the Outstanding Office Action, are reproduced 20 for the convenience of the Examiner:

One histogram computation process that may be employed herein is as follows. Let $I(t,x,y)$ denote the intensity value of a frame in the video sequence at time t at location (x,y), where (x,y) denote a pixel in the two dimensional image plane S. In a 25 digital video, the color of each pixel is represented as a three dimensional vector. Each dimension denotes a base color, namely, red, green and blue. Each base color takes values from 0 to 255 (assuming each color is represented by 8 bits). Therefore, 24 bits represents one pixel. Assuming there is a one-to-one mapping 30 from 24 dimensional vector to integers between 1 to M values, where M is the number of bins in the histogram (as noted above). Let this mapping be denoted by G. After setting $H(t,j)=0$ for all $j=1$ . . . M, every pixel in the image plane S is traversed and the color at a given pixel, i.e., $I(t,x,y)$, is mapped to its 35 corresponding value, e.g., $G(I(t,x,y))=j$, where j is a value of 1 to M. Then $H(t,j)$ is incremented by one. After all the pixels in the frame are traversed, each $H(t,j)$ is divided by N for normalization purposes, where N is the total number of pixels in a frame. ***This an exemplary histogram computation process that may*** 40 ***be employed herein.***
(Col. 11, lines 14-34 of Toklu, ***Emphasis Added***)
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        Next, with continued reference to FIG. 2C, a temporal
color histogram activity curve defining the color-based
distance is generated for each video segment (step 228) by
computing a distance between the color histogram of each
frame with an average histogram in the given shot.
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(Col. 11, lines 36-40 of Toklu, *Emphasis Added*)
...
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        If, after the smoothing process (step 230), there were
no color histogram activity segments detected for a given
video segment (negative result in step 231), then the first
frame of the given video segment will be selected as a
key-frame for that video segment (step 232).
        On the other hand, if there were one or more color
histogram activity segments detected for a given video
segment (affirmative result in step 231), then the
key-frames of the given video segment are chosen by
selecting one frame of each color histogram activity segment
in the shot as a key-frame for the shot (step 233).
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(Col. 12, lines 32-42 of Toklu)

From the above it is believed that histogram characterizes the content of a frame, and the above disclosure relates to the manner in which the histogram information can be used in key frame selection.

25   At least the above disclosure is silent on how <u>pixels within a frame</u> can be selected in using a histogram.

It is therefore concluded that there is no disclosure or suggestion at least in the above quoted portions of the claimed feature of considering only pixels with a corresponding
30   displacement magnitude outside of a range for computing the representative magnitude.

Accordingly, it is submitted that the Outstanding Office Action does not establish a proper basis for anticipation under 35 U.S.C. § 103(a) in relation to original claim 6.

35   It is therefore asserted that claim 6 is independently allowable over the art of record.

Conclusion

Thus, all the objections and rejections are believed to be overcome and the application is believed to be in condition for allowance. The Examiner is invited to telephone the
40   undersigned representative at 707.356.4172 if it is believed that an interview might be useful for any reason.

Reply to Nonfinal Office Action of 09/13/2007
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Respectfully submitted,
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Signature

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